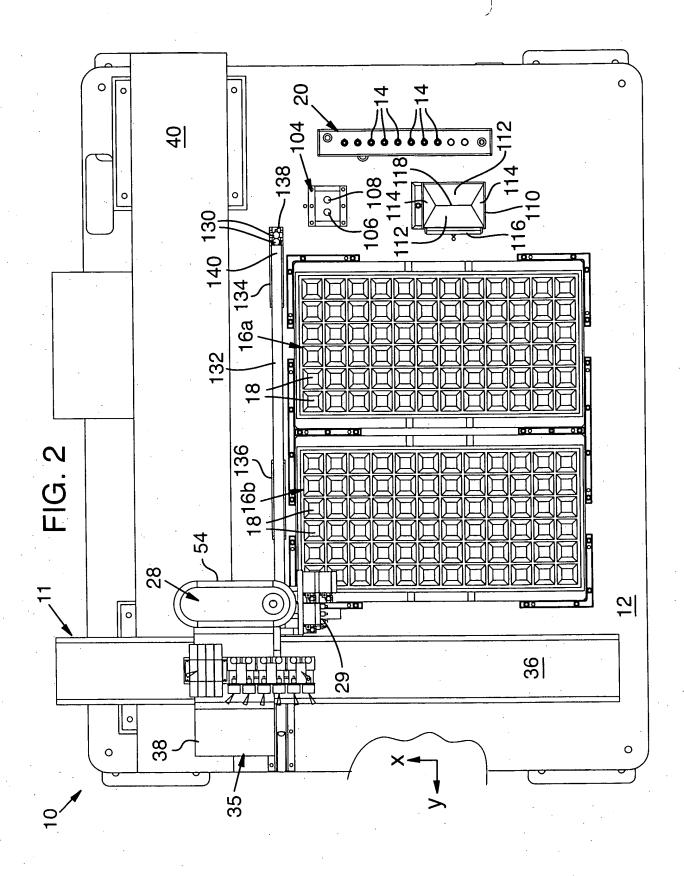
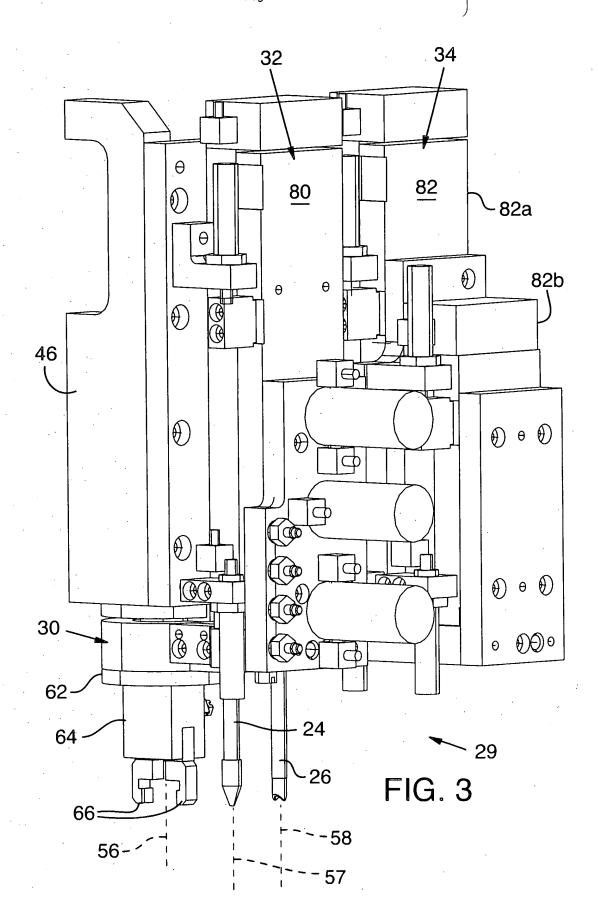


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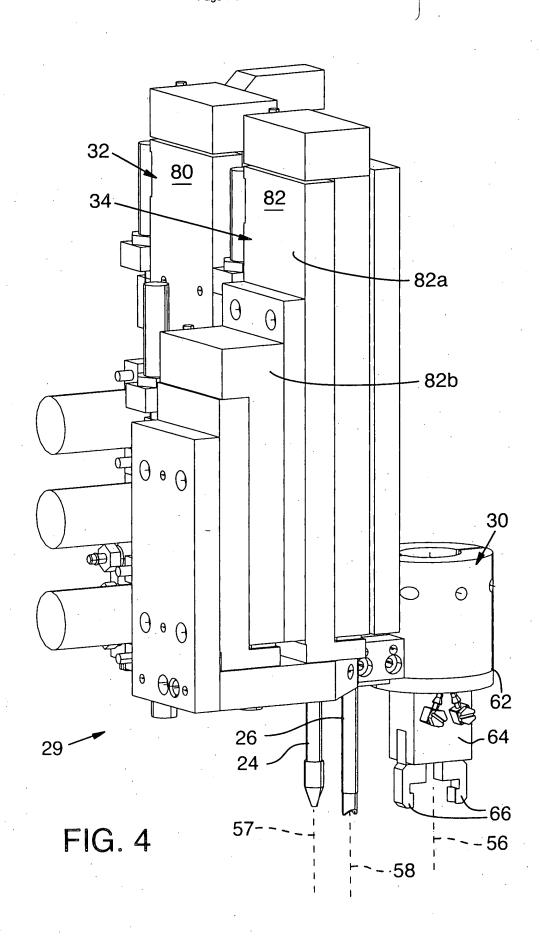
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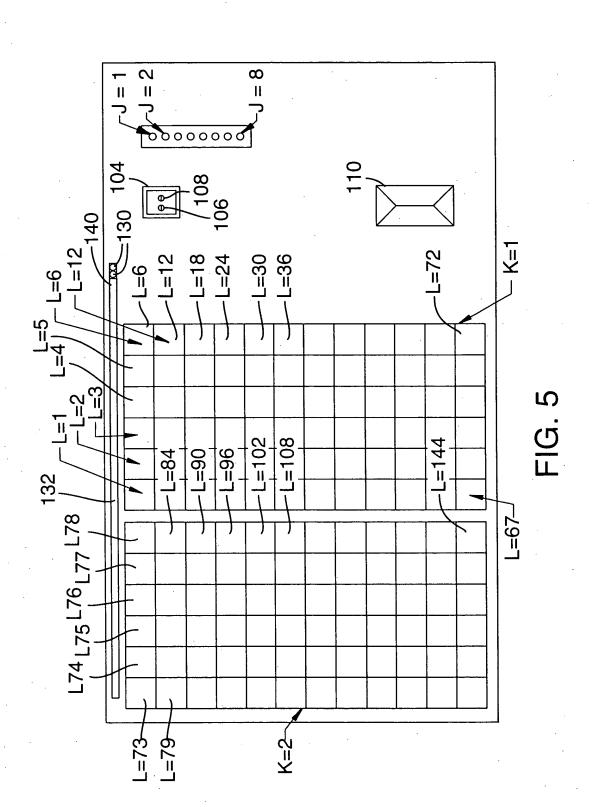


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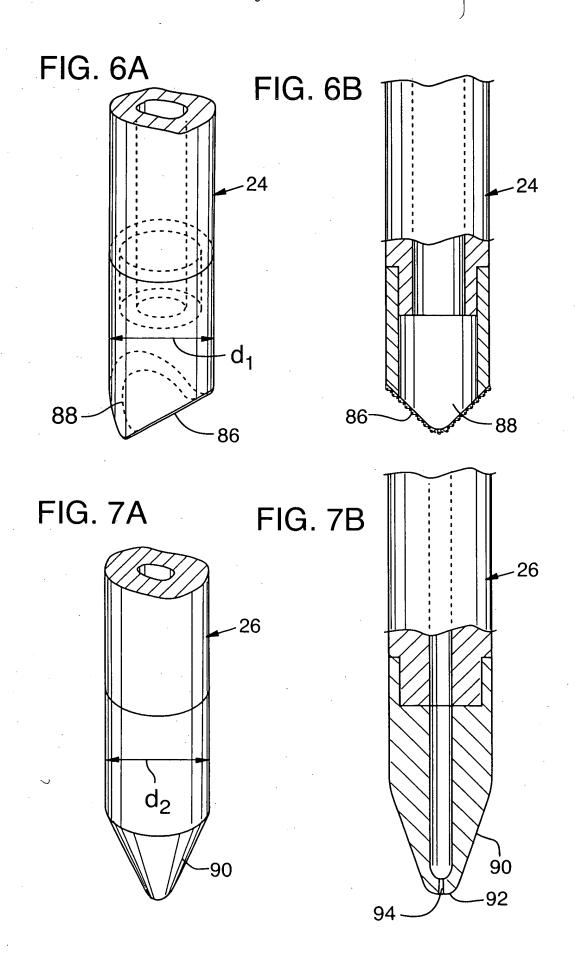


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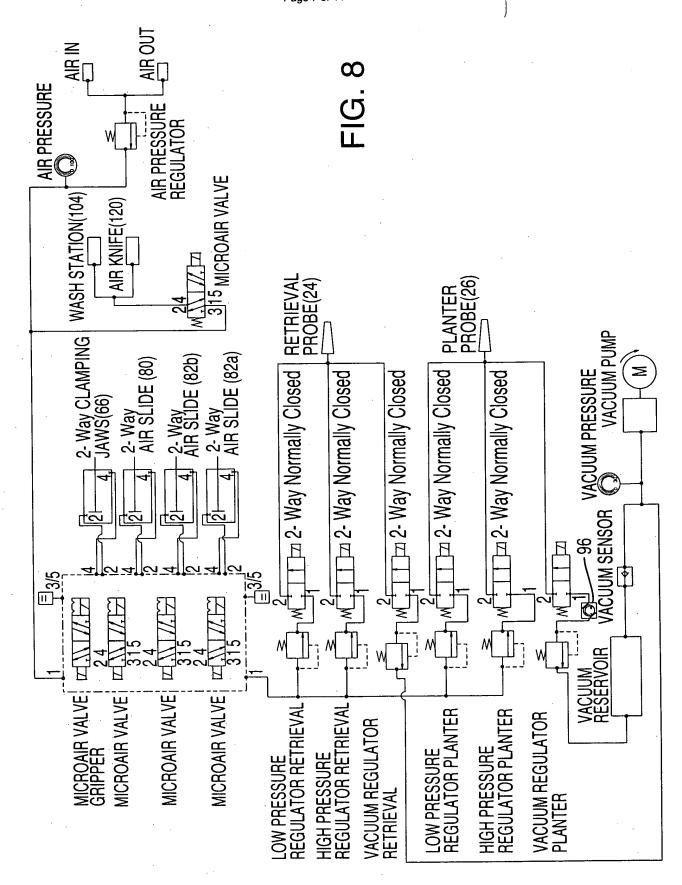




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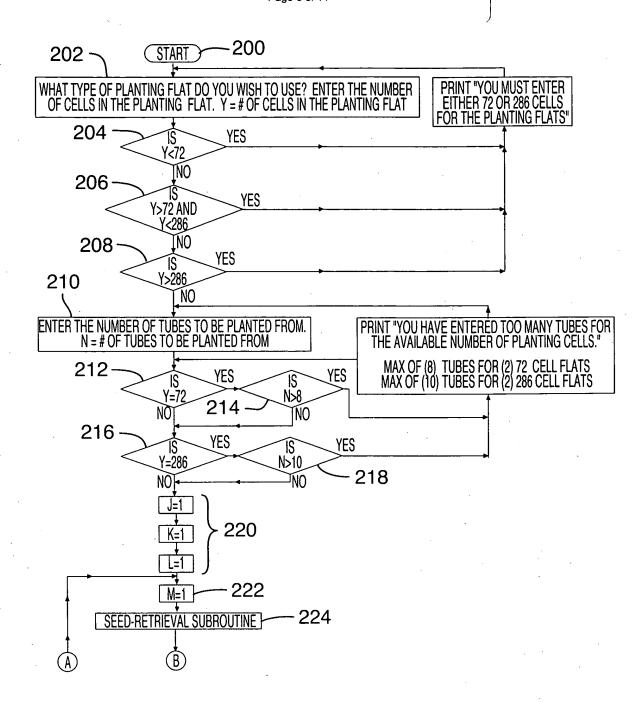


FIG. 9A

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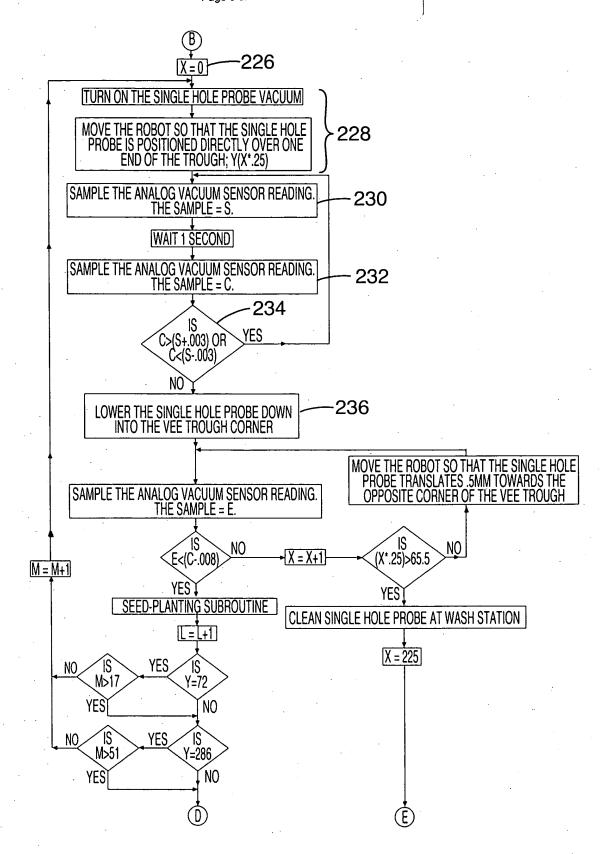


FIG. 9B

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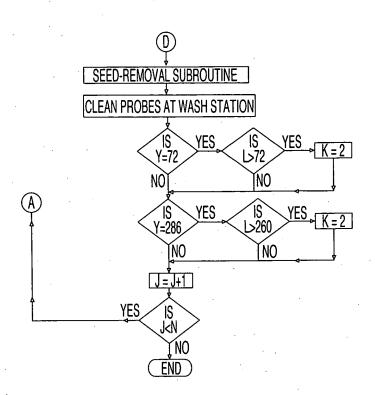
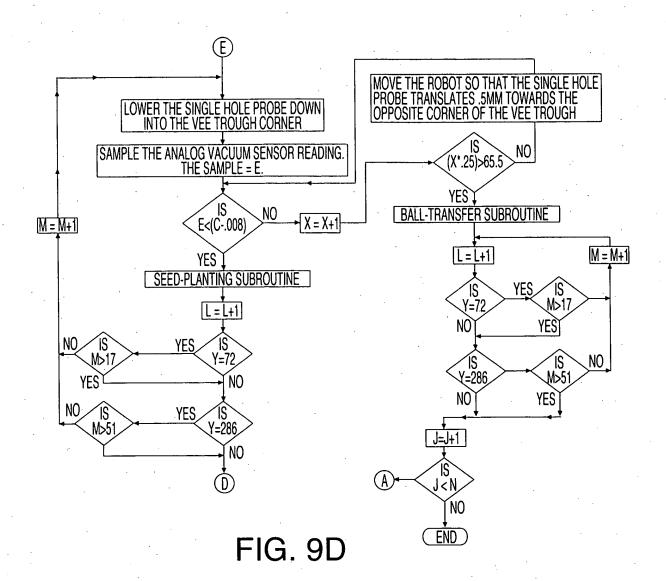
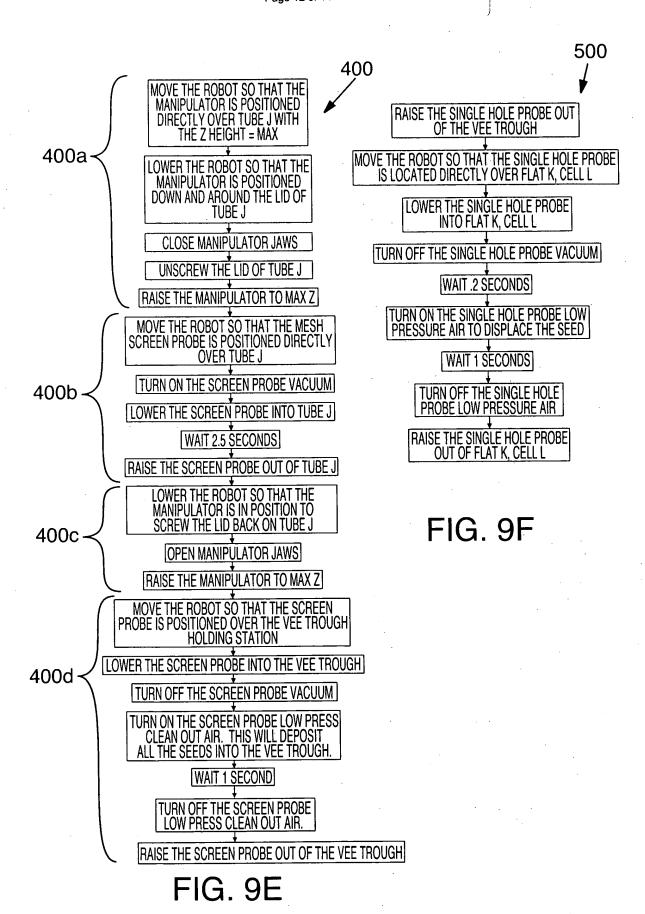


FIG. 9C





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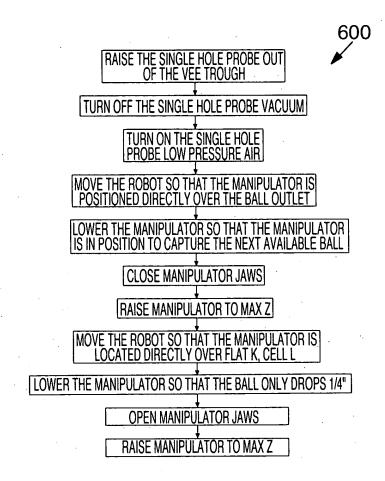


FIG. 9G

Inventor (s): Keller et al. Filing Date: October 21, 2003 / Application No. 10/691,042 Title: ROBOTIC SEED-PLANTING APPARATUS AND METHODS Attorney's Matter No.: 6616-67037 Page 14 of 14 700 MOVE THE ROBOT SO THAT THE SCREEN PROBE IS POSITIONED DIRECTLY OVER ONE END OF THE VEE TROUGH TURN ON THE SCREEN PROBE VACUUM LOWER THE SCREEN PROBE DOWN INTO THE 700a **VEE TROUGH** MOVE THE SCREEN PROBE SLOWLY TO THE OPPOSITE END OF THE VEE TROUGH RAISE THE SCREEN PROBE OUT OF THE VEE TROUGH MOVE THE ROBOT SO THAT THE MANIPULATOR IS POSITIONED DIRECTLY OVER TUBE J WITH THE Z HEIGHT = MAX 800 LOWER THE ROBOT SO THAT THE MANIPULATOR IS POSITIONED DOWN AND AROUND THE LID OF TUBE J 700b **CLOSE MANIPULATOR JAWS** MOVE THE ROBOT SO THAT THE SCREEN PROBE AND SINGLE HOLE PROBE IS LOCATED UNSCREW THE LID OF TUBE J DIRECTLY OVER THE WASH STATION RAISE MANIPULATOR TO MAX Z LOWER THE PROBES INTO THE WASH STATION MOVE THE ROBOT SO THAT THE MESH SCREEN PROBE IS POSITIONED DIRECTLY OVER TUBE J TURN ON THE SCREEN AND SINGLE HOLE PROBES HIGH PRESSURE AIR LOWER THE SCREEN PROBE TO THE TOP OF TUBE J TURN ON THE WASH STATION AND VEE TROUGH AIR TURN OFF THE SCREEN PROBE VACUUM WAIT 1 SECOND WAIT .2 SECONDS TURN OFF THE WASH STATION 700c TURN ON THE SCREEN PROBE LOW PRESSURE AIR TURN OFF THE SCREEN HIGH PRESSURE AIR WAIT 1 SECOND RAISE THE PROBES OUT OF THE WASH STATION TURN OFF THE SCREEN PROBE LOW PRESSURE AIR FIG. 91 RAISE THE SCREEN PROBE OUT OF TUBE J MOVE THE ROBOT SO THAT THE MANIPULATOR IS IN POSITION TO SCREW THE LID BACK ON TUBE J 700d SCREW THE LID BACK ON TUBE J

FIG. 9H

OPEN MANIPULATOR JAWS

RAISE MANIPULATOR TO MAX Z